

## Abstract

Described is a system and method for dynamically modifying an executing heterogeneous program in a heterogeneous distributed computing environment. A system reference is obtained to a target system on which the heterogeneous program is executing. The target system may be a local or a remote system. Based on the system reference, a program reference associated with the program is obtained which is used to locate a component of the program. An executable code associated with the component is modified to create a modified executable code based on a modification of an internal representation of the component. The modified code is inserted into the target system memory without requiring the target system to go offline. The code is inserted either by patching over an original memory area or injecting into a new memory location. The code may be inserted when the target program is operating in user mode or kernel mode.

